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Safety precautions

Carefully follow the precautions listed below because they are essential to guarantee the safety of the equipment.



WARNING

- Always disconnect the air conditioner from the power supply before servicing it or accessing its internal components.
- Verify that installation and testing operations are performed by qualified personnel.
- Verify that the air conditioner is not installed in an easily accessible area.

General information

- ▶ Carefully read the content of this manual before installing the air conditioner and store the manual in a safe place in order to be able to use it as reference after installation.
- ▶ For maximum safety, installers should always carefully read the following warnings.
- ▶ Store the operation and installation manual in a safe location and remember to hand it over to the new owner if the air conditioner is sold or transferred.
- ▶ This manual explains how to install an indoor unit with a split system with two SAMSUNG units. The use of other types of units with different control systems may damage the units and invalidate the warranty. The manufacturer shall not be responsible for damages arising from the use of non compliant units.
- ▶ The air conditioner is compliant with the requirements of the Low Voltage Directive (72/23/EEC), the EMC Directive (89/336/EEC) and the Directive on pressurized equipment (97/23/EEC).
- ▶ The manufacturer shall not be responsible for damage originating from unauthorized changes or the improper connection of electric and requirements set forth in the "Operating limits" table, included in the manual, shall immediately invalidate the warranty.
- ▶ The air conditioner should be used only for the applications for which it has been designed: the indoor unit is not suitable to be installed in areas used for laundry.
- ▶ Do not use the units if damaged. If problems occur, switch the unit off and disconnect it from the power supply.
- ▶ In order to prevent electric shocks, fires or injuries, always stop the unit, disable the protection switch and contact SAMSUNG's technical support if the unit produces smoke, if the power cable is hot or damaged or if the unit is very noisy.
- ▶ Always remember to inspect the unit, electric connections, refrigerant tubes and protections regularly. These operations should be performed by qualified personnel only.
- ▶ The unit contains moving parts, which should always be kept out of the reach of children.
- ▶ Do not attempt to repair, move, alter or reinstall the unit. If performed by unauthorized personnel, these operations may cause electric shocks or fires.

- ▶ Do not place containers with liquids or other objects on the unit.
- ▶ All the materials used for the manufacture and packaging of the air conditioner are recyclable.
- ▶ The packing material and exhaust batteries of the remote controller(optional) must be disposed of in accordance with current laws.
- ▶ The air conditioner contains a refrigerant that has to be disposed of as special waste. At the end of its life cycle, the air conditioner must be disposed of in authorized centers or returned to the retailer so that it can be disposed of correctly and safely.

Installing the unit

IMPORTANT: When installing the unit, always remember to connect first the refrigerant tubes, then the electrical lines.

Always disassemble the electric lines before the refrigerant tubes.

- ▶ Upon receipt, inspect the product to verify that it has not been damaged during transport. If the product appears damaged, DO NOT INSTALL it and immediately report the damage to the carrier or retailer (if the installer or the authorized technician has collected the material from the retailer.)
- ▶ After completing the installation, always carry out a functional test and provide the instructions on how to operate the air conditioner to the user.
- ▶ Do not use the air conditioner in environments with hazardous substances or close to equipment that release free flames to avoid the occurrence of fires, explosions or injuries.
- ▶ Our units should be installed in compliance with the spaces shown in the installation manual, to ensure accessibility from both sides and allow repairs or maintenance operations to be carried out. The unit's components should be accessible and easy to disassemble without endangering people and objects.

For this reason, when provisions of the installation manual are not complied with, the cost required to access and repair the units (in SAFETY CONDITIONS, as set out in prevailing regulations) with harnesses, ladders, scaffolding or any other elevation system will NOT be considered part of the warranty and will be charged to the end customer.

Power supply line, fuse or circuit breaker

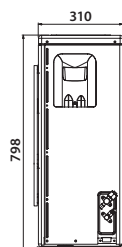
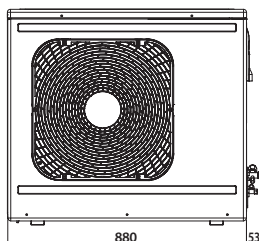
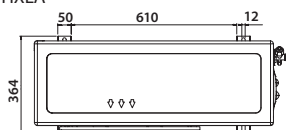
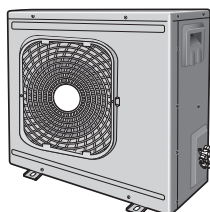
- ▶ Always make sure that the power supply is compliant with current safety standards. Always install the air conditioner in compliance with current local safety standards.
- ▶ Always verify that a suitable grounding connection is available.
- ▶ Verify that the voltage and frequency of the power supply comply with the specifications and that the installed power is sufficient to ensure the operation of any other domestic appliance connected to the same electric lines.
- ▶ Always verify that the cut-off and protection switches are suitably dimensioned.
- ▶ Verify that the air conditioner is connected to the power supply in accordance with the instructions provided in the wiring diagram included in the manual.
- ▶ Always verify that electric connections (cable entry, section of leads, protections...) are compliant with the electric specifications and with the instructions provided in the wiring scheme. Always verify that all connections comply with the standards applicable to the installation of air conditioners.
- ▶ Devices disconnected from the power supply should be completely disconnected in the condition of overvoltage category.

Preparation for outdoor unit installation

The air conditioner uses R410A refrigerant.

A Type: RC060DHXEA/ RC071DHXEA/ RC071PHXEA

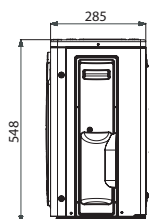
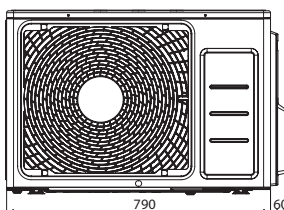
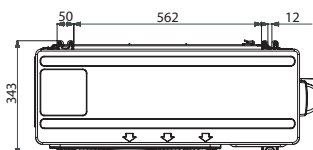
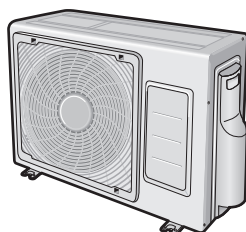
■ Heat pump



(Unit: mm)

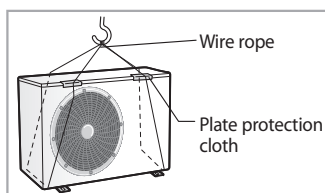
B Type: RC026DHXEA / RC035DHXEA / RC052DHXEA

■ Heat pump



Moving the Outdoor Unit by Wire Rope

Fasten the outdoor unit by two 8m or longer wire ropes as shown at the figure. To prevent from damage or scratches, insert a piece of cloth between the outdoor unit and rope, then move the unit.

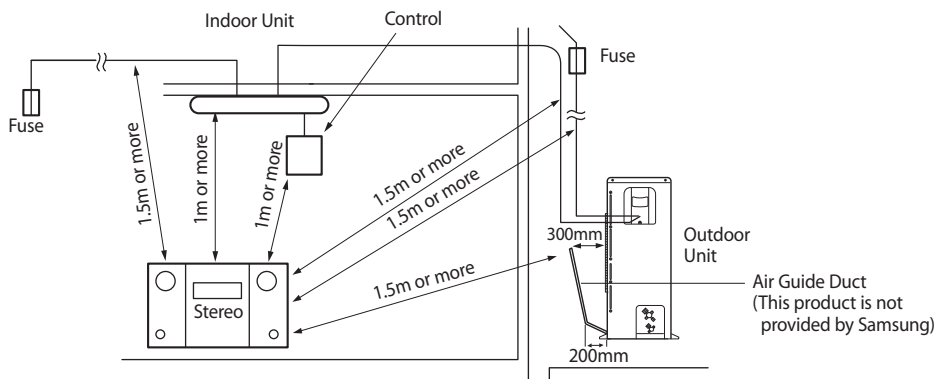


* The appearance of the unit may be different from the picture depending on the model.

Deciding on where to install the outdoor unit

Outdoor Unit

- ◆ The outdoor unit must not be placed on its side or upside down, as the compressor lubrication oil will run into the cooling circuit and seriously damage the unit.
- ◆ Choose a location that is dry and sunny, but not exposed to direct sunlight or strong winds.
- ◆ Do not block any passageways or thoroughfares.
- ◆ Choose a location where the noise of the air conditioner when running and the discharged air do not disturb any neighbours.
- ◆ Choose a position that enables the pipes and cables to be easily connected to the indoor unit.
- ◆ Install the outdoor unit on a flat, stable surface that can support its weight and does not generate any unnecessary noise and vibration.
- ◆ Position the outdoor unit so that the air flow is directed towards the open area.
- ◆ Maintain sufficient clearance around the outdoor unit, especially from a radio, computer, stereo system, etc.



- ◆ If the outdoor unit is installed at a height, ensure that its base is firmly fixed in position.
- ◆ Make sure that the water dripping from the drain hose runs away correctly and safely.
- ◆ When you install the outdoor unit at wayside, you should install it above 2m height or make sure that the heat from the outdoor unit shouldn't be in direct contact with passersby. (The ground for application :The revision of regulation for facility in building by the law of the Ministry of Construction and Transportation.



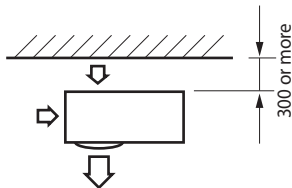
CAUTION

- You have just purchased a system air conditioner and it has been installed by your installation specialist.
- This device must be installed according to the national electrical rules.
- With an outdoor unit having net weight upper than 60kg, we suggest do not install it suspended on wall, but considering floor standing one.

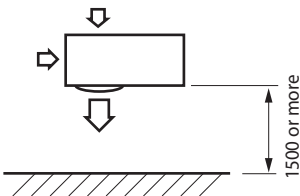
Deciding on where to install the outdoor unit

Space Requirements for Outdoor Unit

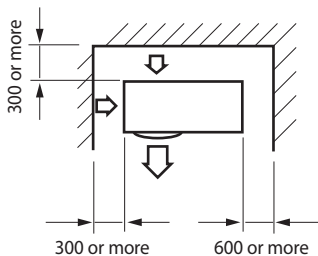
When installing 1 outdoor unit



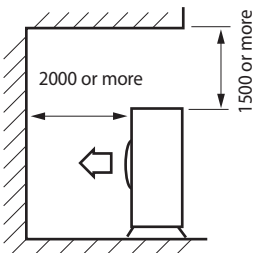
* When the air outlet is opposite the wall



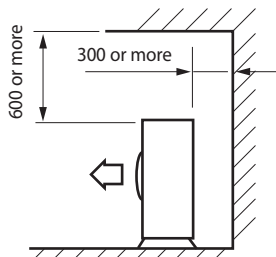
* When the air outlet is towards the wall



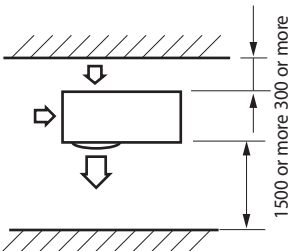
* When 3 sides of the outdoor unit are blocked by the wall



* The upper part of the outdoor unit and the air outlet is towards the wall



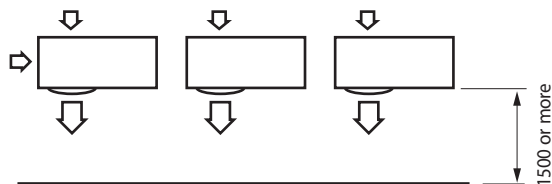
* The upper part of the outdoor unit and the air outlet is opposite the wall



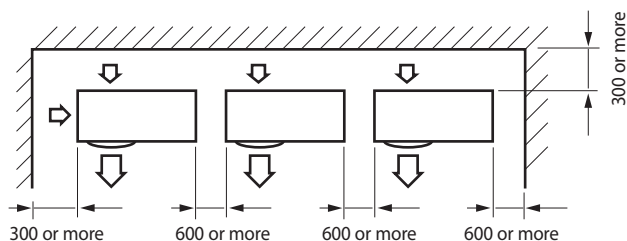
* When front and rear side of the outdoor unit is towards the wall

When installing more than 1 outdoor unit

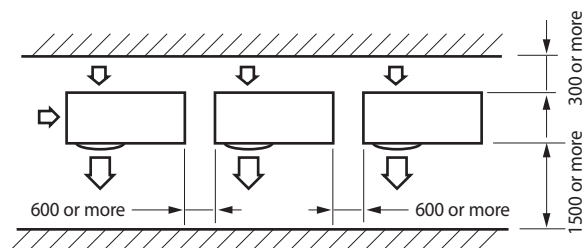
(Unit : mm)



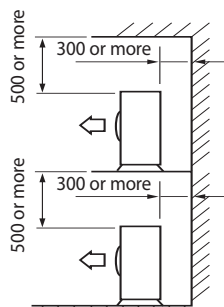
* When the air outlet is towards the wall



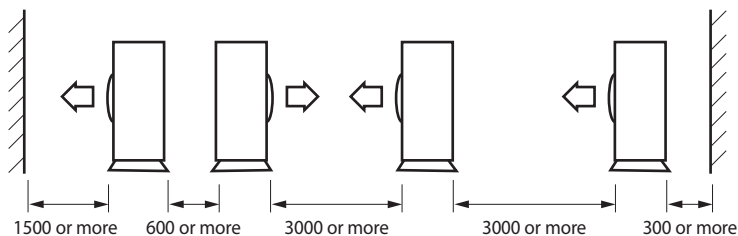
* When 3 sides of the outdoor unit are blocked by the wall



* When front and rear side of the outdoor unit is towards the wall



* The upper part of the outdoor unit and the air outlet is towards the wall



* When front and rear side of the outdoor unit is towards the wall



- The units must be installed according to distances declared, in order to permit accessibility from each side, either to guarantee correct operation of maintenance or repairing products.
The unit's parts must be reachable and removable completely under safety condition (for people or things).

Outdoor unit installation

The outdoor unit must be installed on a rigid and stable base to avoid any increase in the noise level and vibration, particularly if the outdoor unit is to be installed in a location exposed to strong winds or at a height, the unit must be fixed to an appropriate support(wall or ground).

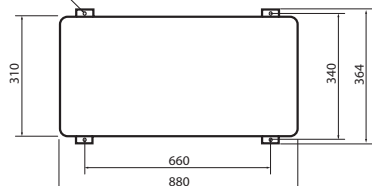
Fix the outdoor unit with anchor bolts.



- The anchor bolt must be 20mm or higher from the base surface.

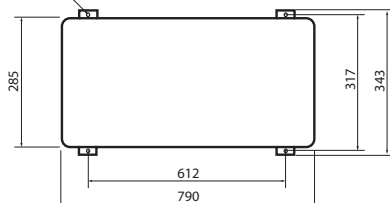
(Unit : mm)

Anchor bolt hole



Type A

Anchor bolt hole

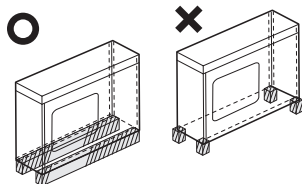


Type B



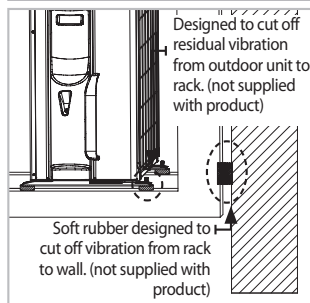
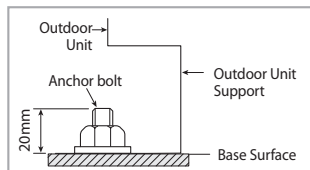
- Make a drain outlet around the base for outdoor unit drainage.
- If the outdoor unit is installed on the roof, you have to check the ceiling strength and waterproof the unit.

Outdoor Unit Support



OUTDOOR UNIT INSTALLED ON THE WALL BY RACK

- Ensure the wall will be able to suspend the weight of rack and outdoor unit ;
- Install the rack close to the column as much as possible ;
- Install proper grommet in order to reduce noise and residual vibration transferred by outdoor unit towards wall.



- When installing air guide duct
- Check and make sure that screws do not damage the copper pipe.
- Secure air guide duct on guard fan.

Connecting the cable

Two electronic cables must be connected to the outdoor unit.

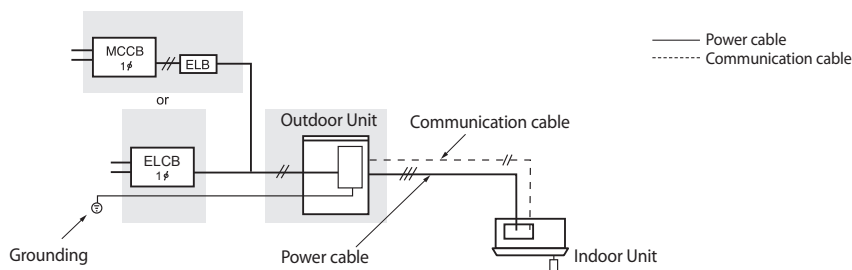
- ◆ The connection cord between indoor unit and outdoor unit.
- ◆ The power cable between outdoor unit and auxiliary circuit breaker.
- ◆ Specially for Russian and European market, before installation, the supply authority should be consulted to determine the supply system impedance to ensure compliance.



- During the unit installation make first refrigerant connections and then electrical connections. If unit is uninstalled first disconnect electrical cables, then refrigerant connections.
- Connect the air conditioner to grounding system before performing the electrical connection.
- When installing the unit, you shouldn't use inter connection wire.

Example of Air Conditioner System

When using ELB for 1 phase



- * If an outdoor unit is installed in a place in danger of an electric leak or submergence, you must install the ELB.

Specification for circuit breaker and power supply cord

- ◆ Power supply cord is not supplied with air conditioner.
- ◆ Select the power supply cord in accordance with relevant local and national regulations.
- ◆ Wire size must comply with the applicable local and national code.
- ◆ Specifications for local wiring power supply cord and branch wiring are in compliance with local cord.
- ◆ This equipment complies with "IEC 61000-3-12(060/071) and IEC 61000-3-2(026/035/052) "

Model	Outdoor Units		Maximum Input Current [A]			Power Supply	
	Rated		Outdoor (Down_Amp)	Indoor (Max.)	Total	MCA	MFA
Outdoor Unit	Hz	Volts					
RC071PHXEA	50	1phase, 220-240	20.00	0.30	20.30	20.30	25.00
RC071DHXEA	50	1phase, 220-240	20.00	0.30	20.30	20.30	25.00
RC060DHXEA	50	1phase, 220-240	20.00	0.30	20.30	20.30	25.00
RC052DHXEA	50	1phase, 220-240	10.50	0.30	10.80	10.80	13.13
RC035DHXEA	50	1phase, 220-240	10.00	0.25	10.25	10.30	12.50
RC026DHXEA	50	1phase, 220-240	10.00	0.25	10.25	10.30	12.50



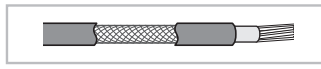
- Power supply cords of parts of appliances for outdoor use shall not be lighter than polychloroprene sheathed flexible cord. (Code designation IEC:60245 IEC 57 / CENELEC:H05RN-F)
 - Select power supply cord based on MCA.
 - MFA is used to select the circuit breaker and the ground fault circuit interrupter (earth leakage circuit breaker).
 - MCA represents maximum input current.
 - MFA represents capacity which may accept MCA.
 - The total length of the communication wire must not exceed 60m. Exceeding 60m may not satisfy the EN55014-1 standard.
 - Communication Cable Specification : 2G, 0.75mm², or more.
- * Abbreviations : MCA : Min. Circuit Amps. (A) ; MFA : Max. Fuse Amps. (A)

Connecting the cable

Between Indoor and Outdoor Connection cable Specifications(Common in use)

Indoor Power supply			Communication Cable	Home Server
Power Supply	Max/Min(V)	Indoor Power cable		
220-240V~ /50Hz	±10%	0.75~1.5mm ² ,3wires	0.75~1.5mm ² ,2wires	0.75mm ² ,2wires

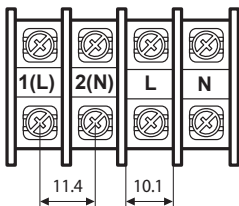
※ For connection cable, use the grade H07RN-F or H05RN-F materials.



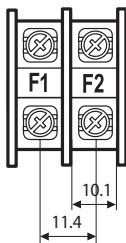
When installing the indoor unit in a computer room or net work room, use the double shielded (Tape aluminum / polyester braid + copper) cable of FROHH2R type.

1-phase terminal block spec

AC power : M4 screw

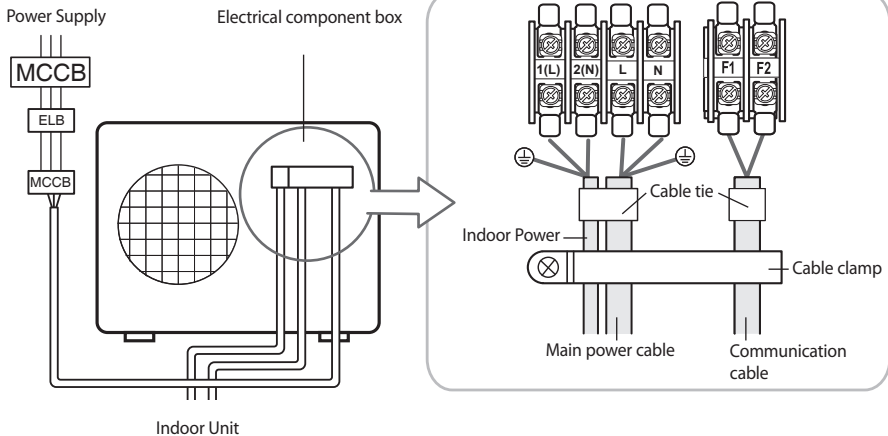


Communication : M4 screw



Wiring Diagram of Power Cable

When using ELB for 1 phase



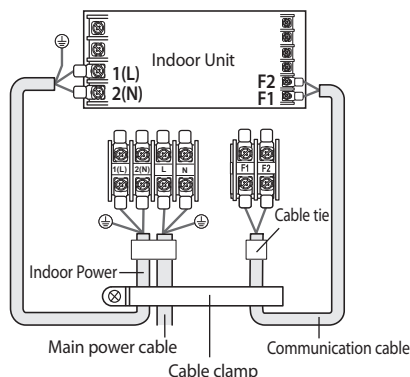
※ The appearance of the unit may be different from the picture depending on the model.



- You should connect the power cable into the power cable terminal and fasten it with a clamp.
- The unbalanced power must be maintained within 2% of supply rating.
 - If the power is unbalanced greatly, it may shorten the life of the condenser. If the unbalanced power is exceeded over 4% of supply rating, the indoor unit is protected, stopped and the error mode indicates.
- To protect the product from water and possible shock, you should keep the power cable and the connection cord of the indoor and outdoor units within ducts. (with appropriate IP rating and material selection for your application)
- Ensure that main supply connection is made through a switch that disconnects all poles, with contact gap of a least 3 mm.
- Devices disconnected from the power supply should be completely disconnected in the condition of overvoltage category.
- Keep distances of 50mm or more between power cable and communication cable.

Wiring Diagram of Connection Cord

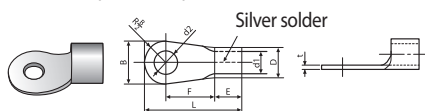
1 phase



- Lay the electrical wiring so that the front cover does not rise up when doing wiring work and attach the front cover securely.
- Ground wire for the indoor unit and outdoor unit connection cable must be clamped to a soft copper tin-plated eyelet terminal with M4 screw hole(NOT SUPPLIED WITH UNIT ACCESSORIES).

Connecting the Power Terminal

- ◆ Connect the cables to the terminal board using the compressed ring terminal.
- ◆ Cover a solderless ring terminal and a connector part of the power cable and then connect it.



Nominal dimensions for cable [mm(inch)]	Nominal dimensions for screw [mm(inch)]	B		D		d1		E	F	L	d2		t
		Standard dimension [mm(inch)]	Allowance [mm(inch)]	Standard dimension [mm(inch)]	Allowance [mm(inch)]	Standard dimension [mm(inch)]	Allowance [mm(inch)]				Standard dimension [mm(inch)]	Allowance [mm(inch)]	
4/6 (0.006/ 0.009)	4(3/8)	9.5(3/8)	±0.2 (±0.007)	5.6(1/4)	+0.3(+0.011) -0.2(-0.007)	3.4(1/8)	±0.2 (±0.007)	6 (1/4)	5 (3/16)	20 (3/4)	4.3 (3/16)	+0.2(+0.007) 0(0)	0.9 (0.03)
	8(3/16)	15(9/16)							9 (3/8)	28.5 (1-1/8)	8.4 (1-3/16)	+0.4(+0.015) 0(0)	
10(0.01)	8(3/16)	15(9/16)	±0.2 (±0.007)	7.1(1/4)	+0.3(+0.011) -0.2(-0.007)	4.5(3/16)	±0.2 (±0.007)	7.9 (5/16)	9 (3/8)	30 (1-3/16)	8.4 (1-3/16)	+0.4(+0.015) 0(0)	1.15 (0.04)
16(0.02)	8(3/16)	16(10/16)	±0.2 (±0.007)	9(3/8)	+0.3(+0.011) -0.2(-0.007)	5.8(1/4)	±0.2 (±0.007)	9.5 (5/16)	13 (1/2)	33 (1-5/16)	8.4 (1-3/16)	+0.4(+0.015) 0(0)	1.45 (0.05)
25(0.03)	8(3/16)	12(1/2)	±0.3 (±0.011)	11.5(7/16)	+0.5(+0.019) -0.2(-0.007)	7.7(5/16)	±0.2 (±0.007)	11 (3/8)	15 (5/8)	34 (1-3/8)	8.4 (1-3/16)	+0.4(+0.015) 0(0)	1.7 (0.06)
	8(3/16)	16.5(10/16)							13 (1/2)	43 (1-11/16)	8.4 (1-3/16)	+0.4(+0.015) 0(0)	
35(0.05)	8(3/16)	16(10/16)	±0.3 (±0.011)	13.3(1/2)	+0.5(+0.019) -0.2(-0.007)	9.4(3/8)	±0.2 (±0.007)	12.5 (1/2)	13 (1/2)	38 (1-1/2)	8.4 (1-3/16)	+0.4(+0.015) 0(0)	1.8 (0.07)
	8(3/16)	22(7/8)							13 (1/2)	43 (1-11/16)	8.4 (1-3/16)	+0.4(+0.015) 0(0)	
50(0.07)	8(3/16)	22(7/8)	±0.3 (±0.011)	13.5(1/2)	+0.5(+0.019) -0.2(-0.007)	11.4(7/16)	±0.3 (±0.011)	17.5 (11/16)	14 (9/16)	50 (2)	8.4 (1-3/16)	+0.4(+0.015) 0(0)	1.8 (0.07)
70(0.10)	8(3/16)	24(1)	±0.4 (±0.015)	17.5(11/16)	+0.5(+0.019) -0.4(-0.015)	13.3(1/2)	±0.4 (±0.015)	18.5 (3/4)	20 (3/4)	51 (2)	8.4 (1-3/16)	+0.4(+0.015) 0(0)	2.0 (0.078)

Connecting the cable

- ◆ Connect the rated cables only.
- ◆ Connect using a driver which is able to apply the rated torque to the screws.
- ◆ If the terminal is loose, fire may occur caused by arc. If the terminal is connected too firmly, the terminal may be damaged.

Tightening Torque (kgf • cm)	
M3	5.0~6.0
M4	12.0~15.0
M5	20.0~25.0

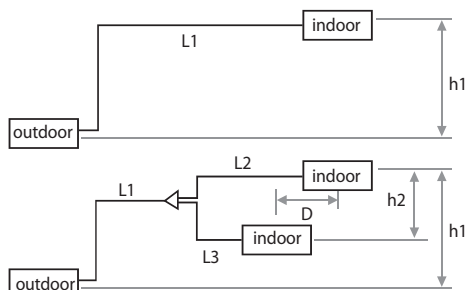


- When connecting cables, you can connect the cables to the electrical part or connect them through the holes below depending on the spot.
- **Run transmission wiring between the indoor and outdoor units through a conduit to protect against external forces, and feed the conduit through the wall together with refrigerant piping.**
- Remove all burrs at the edge of the knock-out hole and secure the cable to the outdoor knock-out using lining and bushing with an electrical insulation such as rubber and so on.
- Must keep the cable in a protection tube.
- Keep distances of 50mm or more between power cable and communication cable.
- When the cables are connected through the hole, remove the Plate bottom.

Connecting the refrigerant pipe

Refrigerant piping system

Items	Maximum allowable length	
	Single installation	DPM installation
		7.1kW
Total pipe length (L1+L2+L3)	-	50 m
Main pipe (L1)	L m	30 m
Max, length between indoor units (D)	-	10 m
Max, length after branch	-	15 m
Max, height difference between outdoor and indoor units (h1)	± h m	± 30 m
Height difference between indoor units (h2)	-	± 0.5 m
Pipe length difference after branch (L2-L3)	-	1 m



Y-joint model: MXJ-YA1509K[Used in common with DVM]

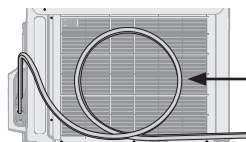
◆ Temper grade and minimum thickness of the refrigerant pipe

Outer diameter [mm]	Minimum thickness [mm]	Temper grade
ø6.35	0.7	C1220T-O
ø9.52	0.7	
ø12.70	0.8	
ø15.88	1.0	
ø15.88	0.8	C1220T-1/2H OR C1220T-H
ø19.05	0.9	
ø22.23	0.9	



- Make sure to use C1220T-1/2H (Semi-hard) pipe for more than Ø19.05mm. In case of using C1220T-O (Soft) pipe for Ø19.05mm, pipe may be broken, which can result in an injury.

	L (m)	h (m)	Applicable outdoor unit models
SINGLE	20	15	RC026DHXEA / RC035DHXEA
	30	20	RC052DHXEA
	50	30	RC060DHXEA / RC071DHXEA / RC071PHXEA
DPM allowed			RC071DHXEA / RC071PHXEA



Make at least one round:
It will reduce noise and vibration

※ The appearance of the unit may be different from the diagram depending on the model.



- After connecting pipes with knock-out treatment, plug the space.
- Following the pipe connection, make sure to proceed precisely to prevent interference with the internal parts.

Connecting up and removing air in the circuit



- When installing, make sure there is no leakage. When recovering the refrigerant, ground the compressor first before removing the connection pipe.
- If the refrigerant pipe is not properly connected and the compressor works with the service valve open, the pipe inhales the air and it makes the pressure inside of the refrigerant cycle abnormally high. It may cause explosion and injury.

The air in the indoor unit and in the pipe must be purged. If air remains in the refrigeration pipes, it will affect the compressor either reduce cooling/heating capacity or lead to a malfunction. Refrigerant for air purging is not charged in the outdoor unit. Use Vacuum Pump as shown at the right figure.

1. Connect each assembly pipe to the appropriate valve on the outdoor unit and tighten the flare nut.
2. Referring to the illustration opposite, tighten the flare nut on section B first manually and then with a torque wrench, applying the following torque.

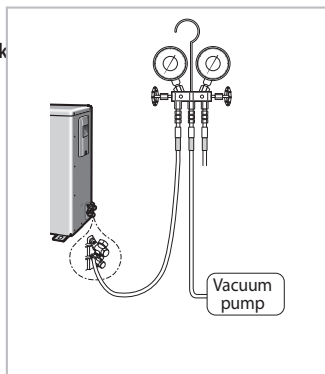
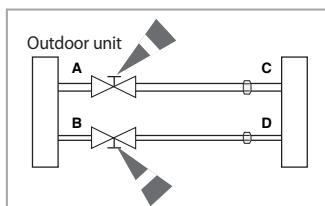
Outer Diameter (D)	Torque (N·m)
ø6.35 mm(1/4")	18
ø9.52 mm(3/8")	42
ø12.70 mm(1/2")	55
ø15.88 mm(5/8")	65
ø19.05 mm(3/4")	100

3. Connect the charging hose of low pressure side of manifold gauge to the pack at the figure.

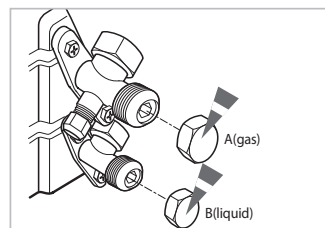


- Make the electrical connection and leave the system into "stand by mode". Do not turn on the system.
- This is necessary to speed up vacuum operation (full OPEN position of Electronic Expansion Valve - EEV -).

4. Open the valve of the low pressure side of manifold gauge counterclockwise.
5. Purge the air from the system using vacuum pump for about 10 minutes.
 - ◆ Close the valve of the low pressure side of manifold gauge clockwise.
 - ◆ Make sure that pressure gauge shows -0.1MPa(-76cmHg) after about 10 minutes. This procedure is very important to avoid a gas leak.
 - ◆ Turn off the vacuum pump.
 - ◆ Remove the hose of the low pressure side of manifold gauge.
6. Set valve cork of both liquid side and gas side of packed valve to the open position.
7. Mount the valve stem nuts and the service port cap to the valve, and tighten them at the torque of 183kgf·cm with a torque wrench.
8. Check for gas leakage.
 - ◆ At this time, especially check for gas leakage from the 3-way valve's stem nuts(A port), and from the service port cap.



* The designs and shape are subject to change according to the model.



- Connect the indoor and outdoor units using pipes with flared connections (not supplied). For the lines, use insulated, unwelded, degreased and deoxidized copper pipe, (Cu DHP type to ISO 1337 or UNI EN 12735-1), suitable for operating pressures of at least 4200kPa and for a burst pressure of at least 20700kPa. Copper pipe for hydro-sanitary applications is completely unsuitable.
- For sizing and limits (height difference, line length, max. bends, refrigerant charge, etc.) see "Connecting refrigerant pipe section".

Installing DPM

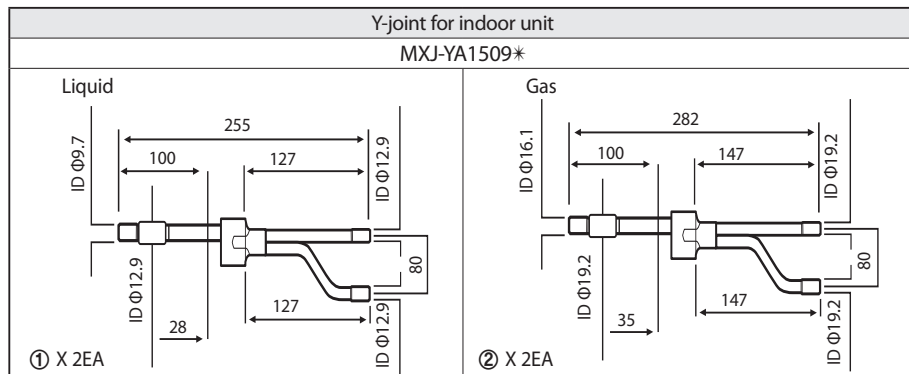
DPM allowable Outdoor and indoor unit models

DPM allowable Outdoor unit models	Indoor unit models		
RC071DHXEA	ACN035NDEHA X2	-	-
RC071PHXEA	ACN035NDEHA X2	-	-

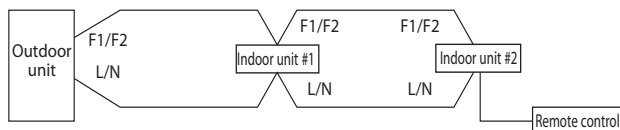
Space requirements for indoor and outdoor units and piping installation

- Refer to page 12~13 installation specification.
- Two indoor units should be installed in one area which is not divided by a wall.
- The distance between two indoor units should be within a straight-line of 10m.
- After branching, the distance between the piping connected to the two indoor units should be within 1m.
- The height difference between two units should be within 0.5m.
- When connecting piping, the Y-joint uses the MXJ-YA1509* material which is commonly used with DVM PLUS IV
(The Y-joint should be installed horizontally and firmly insulated with the provided insulator. – Ceiling leakage protection)

Installing DPM



Connecting communication line and wired remote controller



Operation and specification

- The two sets of the indoor units with DPM installation (2 EA) which are controlled by wired and wireless remote controller work equally. (All controls such as ON/OFF, cooling/heating/dehumidification/ventilation, high/ medium/low wind, fixing louver angle/swing are equally applied.)
- Thermo OFF which stops when indoor temperature reaches set temperature works by the average sensor value of the indoor temperature of two indoor units.
- When either of the two indoor units has a problem, the two indoor units protect operation or stop working.

Instruction for installation and operation

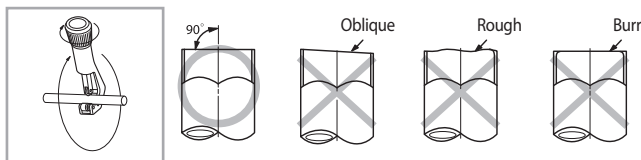
- You should install the DPM according to the above installation specification and eliminate the factors that give electrical load to the both indoor units when installing and operating. (Heater / window / front door / ventilation / partition that divides space)
- You should provide sufficient instructions about the operation method and specification features to users and fill in caution phrases on wired remote controller when necessary.
 - ▶ <The air-conditioners in this area are special type to be controlled simultaneously.>

Set up indoor quantity by key switch(K1, K2)

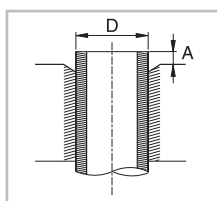
- Press and hold K1 switch to enter the setting mode on the number of the installed indoor unit : Check "A0" sign on 7-segment
 - ▶ Press K2 switch to set the number of the installed indoor unit :
 - Ex) If there are two indoor units, press K2 switch twice, and check "A2" sign on 7-segment.
 - ▶ Press K1 switch to complete setting the number of the installed indoor unit : Check "AA" sign on 7-segment.

Cutting/Flaring the pipes

1. Make sure that you have the required tools available. (pipe cutter, reamer, flaring tool and pipe holder)
2. If you wish to shorten the pipes, cut it with a pipe cutter, taking care to ensure that the cut edge remains at a 90° angle with the side of the pipe. Refer to the illustrations below for examples of edges cut correctly and incorrectly.

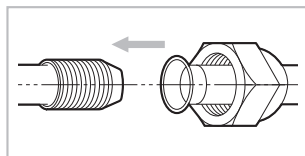


3. To prevent any gas from leaking out, remove all burrs at the cut edge of the pipe, using a reamer.
4. Slide a flare nut on to the pipe and modify the flare.



Outer Diameter (D)	Depth (A)
ø6.35 mm(1/4")	1.3 mm
ø9.52 mm(3/8")	1.8 mm
ø12.70 mm(1/2")	2.0 mm
ø15.88 mm(5/8")	2.2 mm
ø19.05 mm(3/4")	2.2 mm

5. Check that the flaring is correct, referring to the illustrations below for examples of incorrect flaring.



Correct



Inclined

Damaged
Surface

Cracked

Uneven
Thickness

6. Align the pipes and tighten the flare nuts first manually and then with a torque wrench, applying the following torque.

Valve	Flare nut		Valve cap		Pressure port cap		Valve needle		Pressure port	
	Wrench(mm)	N·m	Wrench(mm)	N·m	Wrench(mm)	N·m	Wrench(mm)	N·m	Wrench(mm)	N·m
1/4"	17	18	23	20	18	16~18	Allen(hex.) 5	9	-	0.34
3/8"	22	42	23	20	18	16~18	Allen(hex.) 5	9	-	0.34
1/2"	26	55	29	40	18	16~18	Allen(hex.) 5	13	-	0.34
5/8"	29	65	29	40	18	16~18	Allen(hex.) 5	13	-	0.34
3/4"	36	100	38	40	18	16~18	Allen(hex.) 5	13	-	0.34



- If the pipes require brazing ensure that OFN(Oxygen Free Nitrogen) is flowing through the system.
- Nitrogen blowing pressure range is 0.02 ~ 0.05MPa.

Performing leak tests

LEAK TEST WITH NITROGEN (before opening valves)

In order to detect basic refrigerant leaks, before recreating the vacuum and recirculating the R410A, it's responsible of installer to pressurize the whole system with nitrogen (using a cylinder with pressure reducer) at a pressure above 40 bar (gauge).

LEAK TEST WITH R410A (after opening valves)

Before opening valves, discharge all the nitrogen into the system and create vacuum.

After opening valves check leaks using a leak detector for refrigerant R410A.

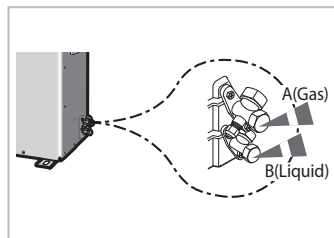
Once you have completed all the connections, check for possible leaks using leak detector specifically designed for HFC refrigerants.

To check for gas leaks on the...

Outdoor unit

Then, using a leak detector, check the...

Valves on sections A and B.

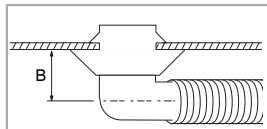
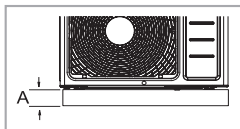


※ The designs and shape are subject to change according to the model.

Connecting the drain hose to the outdoor unit

When using the air conditioner in the heating mode, ice may accumulate . During de-icing (defrost operation), the condensed water must be drained off safely. Consequently, you must install a drain hose on the outdoor unit, following the instructions below.

1. Make space more than 50mm between the bottom of the outdoor unit and the ground for installation of the drain hose, as shown in figure.
2. Insert the drain plug into the hole on the underside of the outdoor unit.
3. Connect the drain hose to the drain plug.
4. Ensure that the drained water runs off correctly and safely.



Model	A	B
RC026DHXEA RC035DHXEA RC052DHXEA	50mm	13mm
RC060DHXEA RC071DHXEA RC071PHXEA	50mm	30mm

Insulation

Once you have checked that there are no leaks in the system, you can insulate the piping and hose.

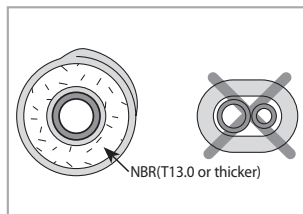
1. To avoid condensation problems, place an insulator around each refrigerant pipe.



- When insulate the pipe, be sure to overlap the insulation.
- You have to use more than 120°C insulation(T13.0 or thicker Acrylonitrile Butadien Rubber) for the gas refrigerant pipe.
- The insulation has to be produced in full compliance of European regulation reg. EEC / EU 2037/ 2000 that requires the use of sheaths insulation form without using CFC and HCFC gases for health and the environment.



- When insulating the pipe, use non-slit insulator.



Using stop valve

To Open the Stop Valve

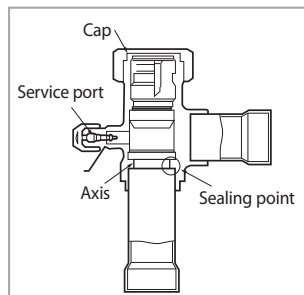
1. Open the cap and turn the stop valve counterclockwise by using a hexagonal wrench.
2. Turn it until the axis is stopped.



NOTE

- Do not apply excessive force to the stop valve and always use special instruments. Otherwise, the stopping box can be damaged and the back sheet can leaks.
- If the watertight sheet leaks, turn the axis back by half, tighten the stopping box, then check the leakage again. If there is no leakage any more, tighten the axis entirely.

3. Tighten the cap securely.



To Close the Stop Valve

1. Remove the cap.
2. Turn the stop valve clockwise by using a hexagonal wrench.
3. Tighten the axis until the valve reached the sealing point.
4. Tighten the cap securely.



CAUTION

- When you use the service port, always use a charging hose, too.
- Check the leakage of refrigerant gas after tightening the cap.
- Must use a spanner and wrench when you open/tighten the stop valve.

Adding refrigerant

The outdoor unit is loaded with sufficient refrigerant for the standard piping. Thus, refrigerant must be added if the piping is lengthened. This operation can only be performed by a qualified refrigeration specialist. For quantity of adding refrigerant, refer to page 20.

1. Check that the stop valve is closed entirely.
2. Charge the refrigerant through the service port of liquid stop valve.



NOTE

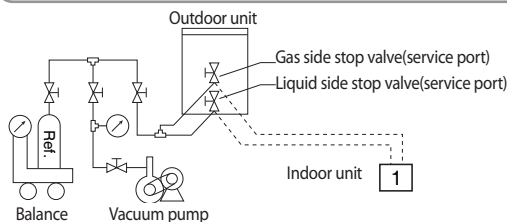
- Do not charge the refrigerant through the gas side service port.

3. If you cannot charge the refrigerant according to the upper steps, following these :
 - 1) Open both liquid stop valve and gas stop valve.
 - 2) Operate the air conditioner by pressing the K2 key on the outdoor unit PCB.
 - 3) About 30 minutes later, charge the refrigerant through the service port of gas stop valve.



NOTE

- If necessary, refer to the pressure table classified by outdoor temperature.



Adding refrigerant

Important information regulation regarding the refrigerant used

This product contains fluorinated greenhouse gases covered by the Kyoto Protocol. Do not vent gases into the atmosphere.



- Inform user if system contains 3 kg or more of fluorinated greenhouse gases. In this case, it has to be checked for leakage at least once every 12 months, according to regulation n°842/2006. This activity has to be covered by qualified personnel only. In case situation above (3 kg or more of R-410A), installer (or recognised person which has responsibility for final check) has to provide a maintenance book, with all the information recorded according to REGULATION(CE) N° 842/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 May 2006 on certain fluorinated greenhouse gases.

Please fill in with indelible ink,

- ① the factory refrigerant charge of the product,
- ② the additional refrigerant amount charged in the field and
- ①+② the total refrigerant charge.

on the refrigerant charge label supplied with the product.



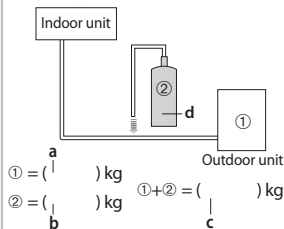
- Factory refrigerant charge of the product: see unit name plate
- Additional refrigerant amount charged in the field(Refer to the above information for the quantity of refrigerant replenishment.)
- Total refrigerant charge
- Refrigerant cylinder and manifold for charging

>> The filled-out label must be adhered in the proximity of the product charging port (e.g. onto the inside of the stop valve cover).

Refrigerant type	GWP value
R410A	1975

※ GWP=Global Warming Potential

Contains fluorinated greenhouse gases covered by the Kyoto Protocol.



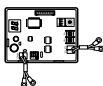





How to Calculate the Quantity of Adding Refrigerant

The quantity of additional refrigerant is variable according to the installation situation. Thus, make sure the outdoor unit situation before adding refrigerant. This operation can only be performed by a qualified refrigeration specialist.

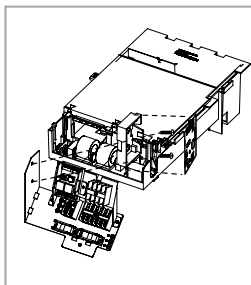
Type	Model	Installation condition	Amount of additional refrigerant charging
SINGLE	RC026DHXEA RC035DHXEA	$L1 \leq 5m$	0 [kg]
		$L1 > 5m$	0 [kg]
	RC052DHXEA	$L1 \leq 5m$	0 [kg]
		$L1 > 5m$	$(L-5) \times A$ [kg], $A=0.010$
	RC060DHXEA RC071DHXEA RC071PHXEA	$L1 \leq 5m$	0 [kg]
		$L1 > 5m$	$(L-5) \times A$ [kg], $A=0.025$
DPM	RC071DHXEA / RC071PHXEA	$L1+L2+L3 \leq 50m$	$(L1-5) \times 0.04 + (L2+L3) \times A$, $A=0.03kg/m$ ($\Phi=6.35mm$) $A=0.04kg/m$ ($\Phi=9.52mm$) ※ 'A' refer to diameter of pipe after joint-distributor

Interface module Installation (Optional)

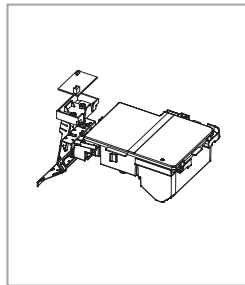
Accessories (Interface module : MIM-B04A)

Interface module 	Interface module power cable 	Interface module communication cable 	Installation Manual 	Case 	Cable-tie 
---	---	---	--	---	---

1. Fix the case at with bolts on the side of the control box in the outdoor unit.(See the picture)
2. Attach the Interface module PCB to the case in the control box in the outdoor unit, then connect the power and the communication cable between the Interface module and the outdoor unit; refer to the figure of page 10~11.
3. If you install a Interface module to an outdoor unit, every indoor unit which is connected to an outdoor unit can be controlled simultaneously.
4. Each outdoor unit connected to the same centralized controller has its own Interface module.



060/071

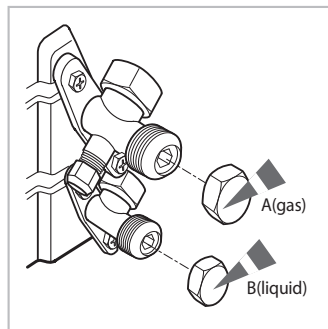


026/035/052

Pump down Procedure

Pump down will be carried out when an evaporator is replaced or when the unit is relocated in another area.

1. Remove the cap from the low pressure side.
2. Turn the low pressure side valve clockwise to close and connect a pressure gauge (low pressure side) to the service valve, and open the valve again.
3. Set the unit to cool operation mode. (Check if the compressor is operating.)
4. Turn the high pressure side valve counter clockwise to close.
5. When the pressure gauge indicates "0" turn the low pressure side valve counter clockwise to close.
6. Stop operation of the air conditioner.
7. Close the each cap of valve.



Relocation of the air conditioner

- Refer to this procedure when the unit is relocated.
- Carry out the pump down procedure (refer to the details of 'pump down').
- Remove the power cord.
- Disconnect the assembly cable from the indoor and outdoor units.
- Remove the flare nut connecting the indoor unit and the pipe.
- At this time, cover the pipe of the indoor unit and the other pipe using a cap or vinyl plug to avoid foreign material entering.
- Disconnect the pipe connected to the outdoor unit. At this time, cover the valve of the outdoor unit and the other pipe using a cap or vinyl plug to avoid foreign material entering.
- Make sure you do not bend the connection pipes in the middle and store together with the cables.
- Move the indoor and outdoor units to a new location.
- Remove the mounting plate for the indoor unit and move it to a new location.

Checking correct grounding

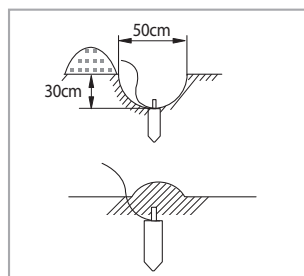
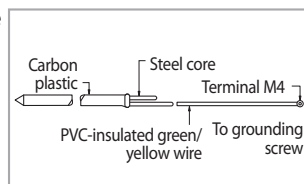
If the power distribution circuit does not have a grounding or the grounding does not comply with specifications, an grounding electrode must be installed.

The corresponding accessories are not supplied with the air conditioner.

1. Select an grounding electrode that complies with the specifications given in the illustration.

2. Connect the flexible hose to the flexible hose port.

- ◆ In damp hard soil rather than loose sandy or gravel soil that has a higher grounding resistance.
- ◆ Away from underground structures or facilities, such as gas pipes, water pipes, telephone lines and underground cables.
- ◆ At least two metres away from a lightning conductor grounding electrode and its cable.



NOTE

- The grounding wire for the telephone line cannot be used to ground the air conditioner.

3. Finish wrapping insulating tape around the rest of the pipes leading to the outdoor unit.

4. Install a green/yellow coloured grounding wire :

- ◆ If the grounding wire is too short, connect an extension lead, in a mechanical way and wrapping it with insulating tape (do not bury the connection).
- ◆ Secure the grounding wire in position with staples.



NOTE

- If the grounding electrode is installed in an area of heavy traffic, its wire must be connected securely.

5. Carefully check the installation, by measuring the grounding resistance with a ground resistance tester. If the resistance is above required level, drive the electrode deeper into the ground or increase the number of grounding electrodes.
6. Connect the grounding wire to the electrical component box inside of the outdoor unit.

Testing operations

1. Check the power supply between the outdoor unit and the auxiliary circuit breaker.

- ◆ 1 phase power supply : L, N

2. Check the indoor unit.

- 1) Check that you have connected the power and communication cables correctly. (If the power cable and communication cables one mixed up or connected incorrectly, the PCB will be damaged.)
- 2) Check the thermistor sensor, drain pump/hose, and display are connected correctly.

3. Press K1 or K2 on the outdoor unit PCB to run the test mode and stop.

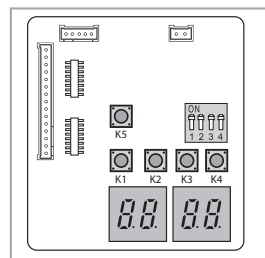
- ◆ Press K1 button → Start Heating test mode → Press K1 button → Stop → Heating test mode 7-seg display:
 - ◆ Press K2 button → Start Cooling test mode → Press K2 button → Stop → Cooling test mode 7-seg display:
 - ◆ Press K1 button twice → Start Defrost test mode → Press K1 button → Stop → Defrost test mode 7-seg display:
- Condition 1 : The outdoor temperature is under 10°C
Condition 2 : All the temperature conditions should meet the defrost conditions

4. After 12 minutes of stationary condition check each indoor unit air treatment :

- ◆ Cooling mode(indoor unit check) → Inlet air temp. - Outlet air temp. : From 10°C to 12°C
- ◆ Heating mode(indoor unit check) → Outlet air temp. - Inlet air temp. : From 11°C to 14°C
- ◆ In heating mode, the indoor fan motor can remain off to avoid cold air blown into conditioned space.

5. How to reset the power supply of the outdoor unit and deactivate the eco mode (standby mode) :

- Press [K3] button to reset the power supply of the outdoor unit.
Press [K5] button to deactivate the eco mode (standby mode)



Testing operations

6. View Mode : When the K4 switch is pressed, you can see information about our system state as below.

Short push	Display contents	SEG1	SEG2	SEG3	SEG4	Unit
1	Order frequency	1	Hundreds' digit	Tens' digit	Unit digit	Hz
2	Current frequency	2	Hundreds' digit	Tens' digit	Unit digit	Hz
3	The number of current indoor units	3	Hundreds' digit	Tens' digit	Unit digit	Hz
4	The sensor for outdoor air intake	4	+ / -	Tens' digit	Unit digit	°C
5	Discharge sensor	5	Hundreds' digit	Tens' digit	Unit digit	°C
6	Eva-Mid sensor	6	+ / -	Tens' digit	Unit digit	°C
7	Cond sensor	7	+ / -	Tens' digit	Unit digit	°C
8	Current	8	Tens' digit	Unit digit	The first place of decimals	°C
9	Fan RPM	9	Thousands' digit	Hundreds' digit	Tens' digit	rpm
10	Target discharge temperature	A	Hundreds' digit	Tens' digit	Unit digit	°C
11	EEV	B	Hundreds' digit	Tens' digit	Unit digit	step
12	The capacity sum of indoor units	C	Tens' digit	Unit digit	The first place of decimals	kW
13	Protective control	D	0: Cooling 1: Heating	Protective control 0: No Protective control 1: Freezing 2: Non-stop defrosting 3: Over-load 4: Discharge 5: Total electric current	Frequency status 0: Normal 1: Hold 2: Down 3: Up_limit 4: Down_limit	-
14	The temperature of heat radiating plate	E	Hundreds' digit	Tens' digit	Unit digit	-
15	S/W check	F	-	-	-	-

Long push 1	Main micom version	Year (Hex)	Month (Hex)	Date (Tens' digit)	Date (Unit digit)
After short push 1	Inverter micom version	Year (Hex)	Month (Hex)	Date (Tens' digit)	Date (Unit digit)
After short push 1	E2P version	Year (Hex)	Month (Hex)	Date (Tens' digit)	Date (Unit digit)

※ Long push K4(Main micom ver.) → short push 1 more(Inv. micom ver.) → short push 1 more(E2P ver.)

7. DIP switch option

	On (default)	Off
switch 1	Auto address	Manual address
switch 2	-	-
switch 3	Disable snow prevention control	Enable snow prevention control
switch 4	-	-

※ When snow prevention mode is in use, eco mode(standby mode)will not be functional.

Troubleshooting

The table below give indication about self diagnostic routine. Some of error code requires activities exclusively for Authorized Service Center.

Outdoor unit

If an error occurs during the operation, it is displayed on the outdoor unit PCB LED, both MAIN PCB and INVERTER PCB.

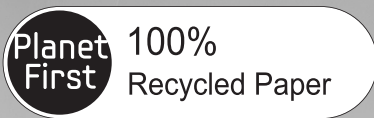
No.	Error Code	Meaning	Remarks
1	E201	Unit quantity miss matching between indoor and outdoor.	Check indoor quantity setting in outdoor (Refer to page 17.)
2	E202	Abnormal state, no communication between Indoor and Outdoor Main PCB	Check electrical connection and setting
3	E203	1min. Time out of communication error(Main↔ Inverter)	Check electrical connection and setting
4	E221	Outdoor temp sensor error	Check Outdoor sensor Open/Short
5	E231	Cond. temp sensor error	Check Cond. sensor Open/Short
6	E251	Discharge temp sensor error	Check Discharge sensor Open/Short
7	E320	OLP Sensor Error	Check OLP sensor Open/Short
8	E403	Detection of Outdoor Freezing when Comp. Stop	Check Outdoor Cond.
9	E404	Protection of Outdoor Overload when Comp. Stop	Check Comp. when it start
10	E416	Discharge temperature of a compressor in an outdoor unit is overheated.	
11	E440	Heating operation is not available since the outdoor air temperature is over 30°C.	Heating
	E441	Cooling operation is not available since the outdoor air temperature is lower than -5°C.	Cooling
12	E458	Outdoor unit BLDC Fan 1 or Fan 2 error	FAN1 error
	E475		FAN2 error
13	E461	Comp. Starting error	
14	E462	Primary Current Trip error	
15	E463	Over current trip / PFC over current error	Check OLP sensor
16	E464	IPM(IGBT Module) Over Current(O.C)	
17	E465	Comp. Over load error	
18	E466	DC-Link voltage under/over error	Check AC Power or DC_Link voltage
19	E467	Comp. wire missing error	Check Comp. wire
20	E468	Current sensor error	Check Outdoor Inverter PBA
21	E471	Outdoor EEPROM error	Check Outdoor EEPROM date
22	E474	IPM(IGBT Module) or PFCM Temperature sensor Error	Check Outdoor Inverter PBA
23	E484	PFC Overload Error	Check Outdoor Inverter PBA
24	E500	IPM is over heated.	Check Outdoor Inverter PBA
25	E554	GAS Leak error	Check indoor and outdoor unit model
26	E556	Capacity miss match between indoor and outdoor	Check indoor and outdoor unit model



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